

A Distributional List with Range Extensions of the Opisthobranch Gastropods of Alaska

by

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Abstract. The geographic occurrence of opisthobranch gastropods in the nearshore waters of Alaska is documented. Scientific names, ranges, and new observations by the authors are presented for 82 species. Eleven records represent range extensions in the North Pacific.

INTRODUCTION

FEW STUDIES HAVE been done on opisthobranch gastropods in Alaskan waters since the early work of DALL (1871) and BERGH (1879, 1880). Sporadic collecting and observations in southern Alaska have extended northward and westward the known ranges of several species formerly listed for the California, Oregon, Washington, and British Columbia coasts (ROBILLIARD, 1974; ROBILLIARD & BARR, 1978; MILLEN, 1983). In the Arctic, MACGINITIE (1959) noted the presence of several species near Point Barrow. Two recent guides to the opisthobranchs of the northeastern Pacific (MACDONALD & NYBAKKEN, 1980; BEHRENS, 1980) contain descriptions and color photographs of many of the species that may be found as far north as Prince William Sound (61°N latitude) and as far west as the Aleutian Islands. However, observations, collections, and photographs by both of the present authors have confirmed that for many species the northern and western ranges are more extensive than previously noted.

This paper presents a summary of geographic distribution data for the opisthobranch gastropods known to inhabit the nearshore waters of Alaska. The listing of families follows the order in which they are arranged in KEEN & COAN (1974). Genera and species are in alphabetical order. Observations by Richard S. Lee are indicated as (RSL); observations by Nora R. Foster, as (NRF); specimens in the Aquatic Collection, University of Alaska Museum, are indicated by (UAM). The 10 species that

are known only from the type specimens and original descriptions are indicated by an asterisk (*); a dagger (†) marks range extensions.

Order CEPHALASPIDEA

Family ACTEONIDAE

Rictaxis punctocaelatus (Carpenter, 1864)

Range: Ketchikan, Alaska to Magdalena Bay, Baja California (DALL, 1921).

Alaskan records: Ketchikan (BEHRENS, 1980); south-east Alaska—not specified (BAXTER, 1983).

Family ATYIDAE

Haminoea vesicula (Gould, 1885)

Range: Prince William Sound, Alaska to Magdalena Bay, Gulf of California (BEHRENS, 1980).

Alaskan records: Ketchikan (BEHRENS, 1980); Drier Bay, Prince William Sound (EYERDAM, 1924); Stephens Passage; Zaikof Bay, Prince William Sound; Drier Bay, Prince William Sound (UAM).

Remarks: 6 specimens from UAM were examined. Uncommon in grab samples nearshore from 30 to 50 m depth.

Haminoea virescens (Sowerby, 1833)

Range: Prince William Sound, Alaska (BEHRENS, 1980) to Mazatlán, Baja California (MARCUS, 1961).

Alaskan records: Alaska—not specified (BEHRENS,

1980); Prince William Sound (R. Rosenthal, personal communication).

Family RETUSIDAE

Retusa obtusa (Montagu, 1803)

Range: boreal Atlantic (THOMPSON & BROWN, 1976); southern Bering Sea (KRAUSE, 1885).

Alaskan records: southern Bering Sea; near St. Lawrence Island; (UAM) eastern Bering Sea (BAXTER, 1983); St. Matthew Island (KRAUSE, 1885).

Remarks: 18 specimens from UAM were examined. Common in grab samples from 30 to 100 m depth.

Retusa pertenuis Mighels, 1843

Range: Arctic Ocean; Bering Sea (KRAUSE, 1885); Prince William Sound, Alaska (EYERDAM, 1924).

Alaskan records: Hinchinbrook Island, Prince William Sound (EYERDAM, 1924); north of Akutan Pass, Aleutian Islands (KRAUSE, 1885).

Retusa semen (Reeve, 1856)

Range: Arctic and North Atlantic—not specified (LA ROCQUE, 1953); Point Collinson, Alaska (DALL, 1919); Prince William Sound, Alaska (EYERDAM, 1924).

Alaskan records: off Point Collinson (DALL, 1919); Prince William Sound (EYERDAM, 1924).

Retusa umbilicata (Montagu, 1803)

Range: North Atlantic Arctic (MACGINITIE, 1959) to Prince William Sound, Alaska (BAXTER, 1983).

Alaskan records: Prince William Sound (BAXTER, 1983); *R. cf. R. umbilicata*, southern Bering Sea (UAM).

Remarks: 2 specimens from UAM were examined.

Family DIAPHANIDAE

Diaphana brunnea Dall, 1919

Range: Kodiak Island, Alaska (DALL, 1919) to Vancouver Island and Strait of Georgia, British Columbia (COWAN, 1964).

Alaskan records: Japonski Island (UAM); Kodiak Island (type locality).

Remarks: 2 specimens from UAM were examined. Uncommon in the intertidal.

Diaphana minuta (Brown, 1827)

Range: Arctic and boreal Atlantic; Point Barrow, Alaska (MACGINITIE, 1959) to the northwestern Gulf of Alaska (BAXTER, 1983).

Alaskan records: Kenai Peninsula; Cook Inlet; northwestern Gulf of Alaska (BAXTER, 1983); Bering Sea (LEMICHE, 1941); Point Barrow (MACGINITIE, 1959).

Family PHILINIDAE

Philine polaris (Aurivillius, 1885)

Range: Arctic seas to Nanaimo, British Columbia (DALL, 1921).

Alaskan records: Prince William Sound to the Aleutian Islands (BAXTER, 1983).

Philine sinuata Stimpson, 1850

Range: northwest Atlantic (LA ROCQUE, 1953); Port Clarence, Bering Strait, Alaska (Krause in DALL, 1921).

Alaskan records: Port Clarence, Bering Strait (Krause in DALL, 1921).

Family AGLAJIDAE

Aglaja ocelligera (Bergh, 1894)

Range: Cook Inlet, Alaska (BAXTER, 1983) to Santa Barbara, California (BEHRENS, 1980).

Alaskan records: Kenai Peninsula; Cook Inlet (BAXTER, 1983); Sitka (type locality).

Melanochlamys diomedea (Bergh, 1894)

Range: Shumagin Islands, Alaska (BERGH, 1894) to Newport Bay, California (BEHRENS, 1980).

Alaskan records: to Prince William Sound and the Kenai Peninsula (BAXTER, 1983); Prince William Sound (UAM); Kodiak Island; Shumagin Islands (BERGH, 1894).

Remarks: 5 specimens from UAM were examined. Uncommon in samples from mud or sandy intertidal habitats.

Family GASTROPTERIDAE

Gastropteron pacificum Bergh, 1894

Range: Unalaska Island, Alaska to San Diego, California.

Alaskan records: lower Cook Inlet; Port Valdez (UAM); Unalaska (type locality).

Remarks: 5 lots from UAM were examined.

Family SCAPHANDRIDAE

Acteocina oldroydi Dall, 1925

Range: Cook Inlet, Alaska (BAXTER, 1983) to British Columbia (DALL, 1925).

Alaskan records: Olsen Bay, Prince William Sound; Orca Inlet, Prince William Sound; Port Valdez (UAM); Kenai Peninsula and Cook Inlet (BAXTER, 1983).

Remarks: 5 specimens from UAM were examined.

Cylichna alba (Brown, 1827)

Range: circumboreal to Monterey, California (DALL, 1921).

Alaskan records: Turner Bay, Icy Strait; Prince William Sound; Bristol Bay; Norton Sound; near Point Barrow (UAM); north of Akutan Pass, Aleutian Islands (KRAUSE, 1885).

Remarks: 31 specimens from UAM were examined. Very common in samples from 7 to 150 m.

Cylichna attonsa Carpenter, 1865

Range: eastern Bering Sea (BAXTER, 1983) to Baja California (LA ROCQUE, 1953).

Alaskan records: Gulf of Alaska (UAM); Afognak Island (EYERDAM, 1960); eastern Bering Sea (BAXTER, 1983).

Remarks: 1 specimen from UAM was examined.

Cylichna occulta Mighels, 1841

Range: Arctic and northwest Atlantic (LEMCHE, 1941); Pt. Barrow, Alaska (MACGINITIE, 1959) to Afognak Island, Alaska (EYERDAM, 1960).

Alaskan records: near Cordova; Bering Sea; Simpson Lagoon; Colville River Delta (UAM); Afognak Island (EYERDAM, 1960).

Remarks: 7 specimens from UAM were examined.

Cylichnella culcitella Gould, 1853

Range: Kodiak Island, Alaska to San Ignacio Lagoon, Baja California (BEHRENS, 1980).

Alaskan records: Kodiak Island (EYERDAM, 1960); Prince William Sound; Kenai Peninsula (BAXTER, 1983).

Cylichnella harpa Dall, 1871

Range: Kenai Peninsula and Cook Inlet, Alaska (BAXTER, 1983) to San Geronimo Island, Baja California (BEHRENS, 1980).

Alaskan records: Prince William Sound; Kenai Peninsula (BAXTER, 1983); *C. cf. C. harpa*, Bering Sea near St. Lawrence Island (UAM).

Remarks: 2 specimens from UAM were examined.

**Scaphander willetti* Dall, 1919

Known only from the type specimen collected at Forrester Island, Alaska.

Order NOTOASPIDEA

Family PLEUROBRANCHIDAE

†*Berthella denticulatus* (MacFarland, 1966)

Range: Point Craven, Alaska to Point Pinos, Pacific Grove, California (LAMBERT, 1976).

Alaskan records: Point Craven (RSL); Hole-in-the-Wall, Prince of Wales Island (UAM); Baranof Island (BARR & BARR, 1983).

Remarks: Range extension from Baranof Island (BARR & BARR, 1983). Two specimens from UAM were examined, both from the shallow nearshore subtidal (3 m). Specimens from Point Craven had external cyclopoid copepod parasites tentatively identified as *Anthessius obtusispina* Ho, 1983.

Berthella sideralis (Loven, 1847)

Range: Norwegian coast (Odhner, 1939 in MACFARLAND, 1966) to Unalaska Island, Alaska (Bergh, 1898 in MACFARLAND, 1966).

Alaskan records: Unalaska Island, Aleutians (Bergh, 1898 in MACFARLAND, 1966).

Order NUDIBRANCHIA

Family ALDISIDAE

Aldisa cooperi Robilliard & Baba, 1972

Range: Hogan Island, Alaska to Trinidad Head, California (MILLEN, 1983).

Alaskan records: Sam Sing Cove (RSL); Hogan Island (MILLEN, 1983).

Remarks: observed in the intertidal.

Aldisa zetlandica (Alder & Hancock, 1855)

Range: North Atlantic; Pt. Barrow, Alaska (MACGINITIE, 1959).

Alaskan records: Point Barrow (MACGINITIE, 1959).

Family ARCHIDORIDAE

Archidoris montereyensis (Cooper, 1863)

Range: Kachemak Bay, Alaska (ROSENTHAL & LEES, 1976) to San Diego, California (ROBILLIARD, 1974).

Alaskan records: Port Valdez (ROBILLIARD, 1974); Sitka (BERGH, 1878); Seldovia (RSL); Kalinin Bay (RSL); Spruce Island (NRF); Kachemak Bay (ROSENTHAL & LEES, 1976).

Remarks: common in the intertidal.

Archidoris odhneri (MacFarland, 1966)

Range: Kenai Peninsula, Alaska (ROBILLIARD & BARR, 1978) to Point Loma, San Diego County, California (ROBILLIARD, 1974).

Alaskan records: Port Dick (ROBILLIARD & BARR, 1978); Auke Bay (ROBILLIARD, 1974); Humpy Cove, Resurrection Bay (NRF); Three Entrance Bay; Sam Sing Cove (RSL).

Remarks: observed in the intertidal and shallow subtidal.

Family ROSTANGIDAE

†*Rostanga pulchra* MacFarland, 1905

Range: Point Craven, Alaska to Bahia de los Angeles, Gulf of California (LANCE, 1966); Chile (MARCUS, 1961); Argentina (Marcus & Marcus, 1966 in MCDONALD, 1983).

Alaskan records: Three Entrance Bay; Sam Sing Cove; Kalinin Bay; Point Craven (RSL); Big Branch Rock (R. Rosenthal, personal communication).

Remarks: range extension from Dundas Island, British Columbia (LAMBERT, 1976). Common in the intertidal.

Family CADLINIDAE

Cadlina luteomarginata MacFarland, 1966

Range: Lynn Canal, Alaska (ROBILLIARD & BARR, 1978) to Punta San Eugenio, Baja California (LANCE, 1961).

Alaskan records: Point Therese, Point Lena, and Amalga Harbor, Lynn Canal (ROBILLIARD & BARR, 1978); Three Entrance Bay; Sam Sing Cove; Halibut Point (RSL).

Remarks: common in the intertidal.

†*Cadlina modesta* MacFarland, 1966

Range: Point Lena, Alaska to La Jolla, California (MACFARLAND, 1966).

Alaskan records: Three Entrance Bay; Point Craven; Point Lena (RSL).

Remarks: range extension from Vancouver Island, British Columbia (ROBILLIARD, 1971).

Cadlina pacifica Bergh, 1879

Range: Captain's Bay, Unalaska Island, Alaska to Coal Harbor, Shumagin Islands, Alaska (BERGH, 1879).

Alaskan records: Captain's Bay, Unalaska Island; Coal Harbor, Shumagin Islands (BERGH, 1879).

Family DISCODORIDAE

†*Anisodoris lentiginosa* Millen, 1983

Range: Kenai Peninsula, Alaska; Strait of Georgia, British Columbia (MILLEN, 1983).

Alaskan records: Gulf of Alaska (59°21.2'N, 150°28.4'W) (UAM).

Remarks: range extension from Queen Charlotte Strait, British Columbia (MILLEN, 1983). One specimen from UAM was examined.

†*Anisodoris nobilis* (MacFarland, 1905)

Range: Kodiak Island, Alaska to Baja California (FARMER & COLLIER, 1963).

Alaskan records: Annette Island; Kalinin Bay; Seldovia; Women's Bay, Kodiak Island (RSL); Washington Bay, Kuiu Island (EYERDAM, 1977); Spruce Island (UAM).

Remarks: range extension from Kuiu Island (EYERDAM, 1977). Uncommon in the intertidal. One specimen from UAM was examined.

Discodoris sandiegensis Cooper, 1863

Range: Unalaska Island, Alaska (BERGH, 1894) to Cabo San Lucas, Baja California, Mexico (LANCE, 1961); Japan (BABA, 1957).

Alaskan records: Sam Sing Cove; Kalinin Bay; Women's Bay, Kodiak Island (RSL); Peratrovich Island (UAM); Unalaska (BERGH, 1894); Naked Island, Prince William Sound; Kachemak Bay (ROSENTHAL & LEES, 1976).

Remarks: 2 specimens from UAM were examined. Common in the intertidal.

Family CALYCIDORIDIDAE

Calycidoris guentheri Abraham, 1876

Range: Arctic seas; Bering Strait, Alaska (ROGINSKAYA, 1972).

Alaskan records: Bering Strait (ROGINSKAYA, 1972) near Wainwright; near Pingok Island; Harrison Bay (UAM).

Remarks: 6 lots from UAM were examined. Uncommon in samples from 14 to 44 m.

Family POLYGERATIDAE

**Issena pacifica* Iredale & O'Donoghue, 1923

Known only from the type specimen collected at Unimak Island, Alaska.

**Palio pallida* Bergh, 1880

Known only from the type specimen collected at Kiska Harbor, Alaska.

Family TRIOPHIDAE

Triopha catalinae (Cooper, 1863)

Range: Amchitka Island, Alaska (ROBILLIARD, 1974) to El Tomatal, Baja California (BERTSCH & ROSAS, 1984); Japan (BABA, 1957).

Alaskan records: Shumagin Islands (BERGH, 1880); Stephens Passage (BARR & BARR, 1983); Port Walter, Baranof Island; Amchitka Island (ROBILLIARD, 1974); Point Craven; Three Entrance Bay (RSL); Sunny Cove, Spruce Island (NRF); Bluff Point, Kachemak Bay; Prince William Sound (ROSENTHAL & LEES, 1976).

Remarks: commonly observed in the intertidal and subtidal (3 m).

Family ONCHIDORIDAE

**Acanthodoris caerulescens* Bergh, 1880

Known only from the type specimen collected at the north end of Nunivak Island, Alaska.

†*Acanthodoris hudsoni* MacFarland, 1905

Range: Three Entrance Bay, Alaska to Gaviota, Santa Barbara County, California (LEE & BROPHY, 1969).

Alaskan records: Three Entrance Bay (RSL).

Remarks: range extension from Porcher Island, British Columbia (LAMBERT, 1976). Occasionally observed in the intertidal.

†*Acanthodoris nanaimoensis* O'Donoghue, 1921

Range: Halibut Point, Baranof Island, Alaska to Purisima Point, Santa Barbara County, California (LEE & BROPHY, 1969).

Alaskan records: Three Entrance Bay; Halibut Point (RSL).

Remarks: range extension from Wales Island, British Columbia (LAMBERT, 1975). Commonly observed in the intertidal.

Two color forms have been photographed in Sitka waters. The more common is light gray to white in body color with yellow-tipped papillae. The other form is brown to brownish gray with the yellow tips of the papillae standing out in strong contrast (RSL).

Acanthodoris pilosa (Abildgaard, 1789)

Range: circumboreal; Kiska Island, Alaska (BERGH, 1880) to Morro Bay, San Luis Obispo County, California (MCDONALD, 1983).

Alaskan records: Kiska Island; Unalaska Island; Yukon Harbor, Shumagin Islands (BERGH, 1880); Uyak Bay, Kodiak Island (UAM); Kenai Peninsula; Cook Inlet (BAXTER, 1983); Zaikof Bay, Prince William Sound (ROSENTHAL, personal communication).

Remarks: 2 lots from UAM were examined.

**Adalaria albopapillosa* (Dall, 1871)

Known only from the type specimen collected at Sitka Harbor, Alaska.

Adalaria pacifica Bergh, 1880

Range: Pribilof Islands, Alaska to Victoria, British Columbia (MILLEN, 1983).

Alaskan records: Bering Sea, northwest of the Pribilof Islands (UAM).

Remarks: 2 lots from UAM were examined.

**Adalaria tschuktschica* Krause, 1885

Known only from the type specimen collected at "Metshigme Bay," Bering Sea.

**Adalaria virescens* Bergh, 1880

Known only from the type specimen collected at Unalaska Island, Alaska.

**Akiodoris lutescens* Bergh, 1880

Range: Aleutian Islands (BERGH, 1880).

Alaskan records: Nazan Bay, Atka Island; Kiska Harbor; Unalaska Island (BERGH, 1880).

Onchidoris bilamellata (Linnaeus, 1767)

Range: circumboreal; Hagemeister Island, Alaska (THOMPSON & BROWN, 1976) to Morro Bay, San Luis Obispo County, California (McDONALD, 1970).

Alaskan records: Kiska Island, Aleutians (BERGH, 1894); Hagemeister Island; Sandborn Harbor, Shumagin Islands (BERGH, 1880); Spruce Island (NRF); Berners Bay; Juneau; Kalinin Bay; Point Craven; Point Courverden (RSL); Nikishka Beach, Kenai Peninsula (UAM); Kachemak Bay (ROSENTHAL & LEES, 1976).

Remarks: 4 lots from UAM were examined. Very common in the upper intertidal.

Onchidoris hystericina (Bergh, 1880)

Range: south of Cabo Colonet, Baja California (FARMER, 1967) to Kiska Island, Alaska (BERGH, 1880).

Alaskan records: Washington Bay (EYERDAM, 1979); Kiska Island (BERGH, 1880); Three Entrance Bay (RSL).

Remarks: not common. Observed once in the intertidal.

Onchidoris varians (Bergh, 1878)

Range: Aleutian Islands, Alaska (BERGH, 1878); Washington Bay, Kuiu Island, Alaska (EYERDAM, 1977).

Alaskan records: Kiska Island; Unalaska Island (BERGH, 1878); Washington Bay (EYERDAM, 1977).

Family CORAMBIDAE

†*Corambe pacifica* MacFarland & O'Donoghue, 1929

Range: Punta San Eugenio, Baja California (McDONALD, 1983) to Sitka, Alaska.

Alaskan records: Sam Sing Cove (RSL); Ataku Island (R. Rosenthal, personal communication).

Remarks: range extension from Nanaimo, British Columbia (McDONALD, 1983).

Family TETHYIDAE

Melibe leonina (Gould, 1852)

Range: Kodiak Island, Alaska (EYERDAM, 1960) to Punta Abreojos, Baja California (LANCE, 1966).

Alaskan records: Dall Island (O'DONOGHUE, 1926); Three Entrance Bay; Sam Sing Cove (RSL); Still Harbor, Baranof Island (UAM); Neets Bay (BARR & BARR, 1983); Kodiak Island (EYERDAM, 1960); Kenai Peninsula; Cook Inlet (BAXTER, 1983); Port Gravina, Prince William Sound (ROSENTHAL, 1977).

Remarks: 2 specimens from UAM were examined. Common in the low intertidal and shallow subtidal.

Family DENDRONOTIDAE

Dendronotus albus MacFarland, 1966

Range: Kenai Peninsula, Alaska (ROBILLIARD & BARR, 1978) to Coronado Islands, Baja California (ROBILLIARD, 1970).

Alaskan records: Port Dick, Kenai Peninsula (ROBILLIARD & BARR, 1978).

Dendronotus dalli Bergh, 1879

Range: circumboreal; Bering Strait, Alaska to Puget Sound, Washington (ROBILLIARD, 1970).

Alaskan records: Bering Strait (BERGH, 1879); Bering Sea and Unalaska Island (MACFARLAND, 1966); South Shelter Island (ROBILLIARD, 1974); southeast Bering Sea (UAM).

Remarks: 5 lots from UAM were examined. Common in samples from 50 to 100 m. Observed in the intertidal in southeast Alaska.

Dendronotus frondosus (Ascanius, 1774)

Range: Arctic seas (THOMPSON & BROWN, 1976); circumboreal; Point Barrow, Alaska to southern California (ROBILLIARD, 1970).

Alaskan records: Point Barrow (MACGINITIE, 1959); Port Moller (BERGH, 1879); Hagemeister Island (MACFARLAND, 1966); St. Lawrence Island (KRAUSE, 1885); Kalinin Bay (RSL); Norton Sound, western Beaufort Sea; northeast Chukchi Sea (UAM).

Remarks: 10 lots from UAM were examined. Common in samples from 50 to 100 m.

Dendronotus iris Cooper, 1863

Range: Unalaska Island, Alaska to Coronado Island, Baja California (ROBILLIARD, 1970).

Alaskan records: frequent records from the subtidal waters throughout the state (ROBILLIARD, 1970); off Unalaska Island (ROBILLIARD, 1970); Steamer Bay (BARR & BARR, 1983).

Dendronotus robustus (Verrill, 1870)

Range: eastern Chukchi Sea; Beaufort Sea; Arctic and North Atlantic oceans (ROBILLIARD, 1970).

Alaskan records: western Beaufort Sea (71°35.4'N, 153°40.1'W); eastern Chukchi Sea (71°35'N, 163°58'W; 71°05'N, 160°08'W).

Remarks: 3 lots from UAM were examined. Uncommon in samples from 46 to 62 m.

Dendronotus rufus O'Donoghue, 1921

Range: Auke Bay, Alaska (ROBILLIARD, 1974) to Seattle, Washington (ROBILLIARD, 1970).

Alaskan records: Auke Bay (ROBILLIARD, 1974); Stephens Passage (BARR & BARR, 1983).

Family TRITONIIDAE

Tochuina tetraquetra (Pallas, 1788)

Range: Kuril Islands; Unalaska Island, Alaska (BERGH, 1884) to Catalina Island, California (ROBILLIARD, 1974).

Alaskan records: Unalaska Island (BERGH, 1884); Resurrection Bay; northeast Gulf of Alaska (UAM); Sam Sing Cove; Kalinin Bay (RSL); Naked Island, Prince William Sound (ROSENTHAL & LEES, 1982).

Remarks: common in samples from the northeast Gulf of Alaska. Observed in the subtidal to 10 m in southeast Alaska.

Tritonia diomedea Bergh, 1894

Range: Shumagin Islands, Alaska (BERGH, 1894) to Panama; Okhotsk Sea; Japan; Florida (MCDONALD, 1983).

Alaskan records: Shumagin Islands (BERGH, 1894); northeast Gulf of Alaska; Prince William Sound (UAM); Sam Sing Cove (RSL).

Remarks: 17 lots from UAM were examined. Common in samples from the northeast Gulf of Alaska. Observed to 10 m in southeast Alaska.

Tritonia festiva (Stearns, 1873)

Range: Kachemak Bay, Alaska (ROSENTHAL & LEES, 1976) to Los Coronados Islands, Baja California (LANCE, 1961); Japan (MCDONALD, 1983).

Alaskan records: Port Dick, Kenai Peninsula (ROBILLIARD & BARR, 1978); Steamer Bay (BARR & BARR, 1983); Sam Sing Cove (RSL); Kachemak Bay (ROSENTHAL & LEES, 1976); Danger Island, Prince William Sound (R. Rosenthal, personal communication).

Remarks: commonly observed in the subtidal to 10 m.

Family ARMINIDAE

†*Armina californica* (Cooper, 1863)

Range: Kayak Island, Gulf of Alaska to Panama (BERGH, 1894).

Alaskan records: near Kayak Island, Gulf of Alaska (UAM); Ernest Sound (D. Kowalski, personal communication); Slocum Arm (BARR & BARR, 1983).

Remarks: range extension from Slocum Arm, Chichagof Island (BARR & BARR, 1983). One UAM specimen was examined. Uncommon in the subtidal.

Family ZEPHYRIDAE

Antipella barbarentis (Cooper, 1863)

Range: Klu Bay, Revillagigedo Island, Alaska (ROBIL-

LIARD & BARR, 1978) to Baja California and the Gulf of California (MCDONALD, 1983).

Alaskan records: Klu Bay (ROBILLIARD & BARR, 1978).

Family DIRONIDAE

†*Dirona albolineata* (Eliot, 1905)

Range: Kachemak Bay, Alaska to La Jolla, California (LANCE, 1966).

Alaskan records: Quiet Harbor (BARR & BARR, 1983); Three Entrance Bay; Sam Sing Cove (RSL); Bidarka Point, Prince William Sound; Kachemak Bay (R. Rosenthal, personal communication).

Remarks: range extension from Quiet Harbor, Etolin Island, Alaska (BARR & BARR, 1983). Common in the intertidal near Sitka.

Three color phases exist, the most common being white in background. The next most frequent is a grayish-pink; and the third, a clear light brick-red to pink form (RSL).

Dirona aurantia Hurst, 1966

Range: King Island, Norton Sound, Alaska (ROBILLIARD & BARR, 1978) to Puget Sound, Washington (ROBILLIARD, 1974).

Alaskan records: King Island; Pribilof Island; Unimak Pass (ROBILLIARD & BARR, 1978); Stikine Pass (BARR & BARR, 1983); Point Therese; Port Valdez (ROBILLIARD, 1974); Women's Bay; Point Craven (RSL); Kachemak Bay (R. Rosenthal, personal communication).

Remarks: commonly observed in the intertidal and subtidal.

Family CORYPHELLIDAE

Flabellina fusca (O'Donoghue, 1921)

Range: Port Valdez, Alaska (ROBILLIARD, 1974) to Seal Rocks State Park, Oregon (ROBILLIARD, 1974).

Alaskan records: Auke Bay; Point Therese; Port Valdez (ROBILLIARD, 1974); Point Craven (RSL); Tenakee Inlet (BARR & BARR, 1983).

Flabellina salmonacea (Couthouy, 1838)

Range: Arctic circumboreal (MACGINITIE, 1959); Point Barrow, Alaska to Pender Harbor, British Columbia (MILLEN, 1983).

Alaskan records: Point Barrow (MACGINITIE, 1959); Bering Strait (LEMICHE, 1941).

**Flabellina subrosacea* (Eschscholtz, 1831)

Known only from the type specimen collected near Sitka.

Flabellina trilineata (O'Donoghue, 1921)

Range: Lisianski Inlet, Alaska to Los Coronados Islands, Baja California (MILLEN, 1983).

Alaskan records: Lisianski Inlet (MILLEN, 1983).

**Flabellina trophina* (Bergh, 1894)

Known only from the type specimen collected at Port Althorp.

Flabellina verrucosa (Sars, 1829)

Range: circumboreal; Hogan Island, Alaska to San Juan Islands, Washington; Japan; North Atlantic (MILLEN, 1983).

Alaskan records: Hogan Island (MILLEN, 1983).

Family CUTHONIDAE

Cuthona concinna (Alder & Hancock, 1843)

Range: Lisianski Inlet, Alaska to White Rock, British Columbia; North Atlantic (MILLEN, 1983).

Alaskan records: Lisianski Inlet, Alaska (MILLEN, 1983).

Cuthona nana (Alder & Hancock, 1842)

Range: Britain; Scandinavia; Bering Sea (THOMPSON & BROWN, 1976).

Alaskan records: St. Lawrence Bay, Bering Sea (KRAUSE, 1885).

Family FIONIDAE

Fiona pinnata (Eschscholtz, 1831)

Range: pelagic in northern temperate oceans (LANCE, 1961).

Alaskan records: Sitka (type locality).

Family AEOLIDIIDAE

Aeolidia papillosa (Linnaeus, 1761)

Range: cosmopolitan in the Northern Hemisphere (MCDONALD, 1983).

Alaskan records: Chignik Bay; Sanborn Harbor, Shumagin Islands (BERGH, 1879); Tutka Bay; Izembek Lagoon (UAM); Outer Point; Sam Sing Cove; Point Craven (RSL); Kachemak Bay (ROSENTHAL & LEES, 1976); Rowan Bay (BARR & BARR, 1983).

Remarks: 2 UAM lots were examined. Uncommonly observed in the intertidal.

Family PHIDIANIDAE

†*Phidiana crassicornis* (Eschscholtz, 1831)

Range: Kodiak Island, Alaska to the Gulf of California (LANCE, 1966).

Alaskan records: Rowan Bay (BARR & BARR, 1983); Wrangell; Baranof Warm Springs Bay; Juneau; Seldovia; Seward; Kodiak (RSL); Sitka (BERGH, 1879); Port Valdez; Resurrection Bay (UAM).

Remarks: range extension from Rowan Bay, Kuiu Island, Alaska (BARR & BARR, 1983). Very commonly observed in the intertidal and subtidal (9 m).

Order GYMNOPHILA

Family ONCHIDELLIDAE

Onchidella borealis Dall, 1871

Range: Aleutian Islands, Alaska to northern California (MARCUS, 1961).

Table 1

New distribution sites of opisthobranch gastropods in Alaska.

Location	Latitude (N)	Longitude (W)
Annette Island	55°09'	131°28'
Ataku Island	56°49'45"	135°29'
Baranof Warm Springs Bay	57°05'	134°47'
Berners Bay	58°43'	135°00'
Bidarka Point, Prince William Sound	60°49'	146°37'
Big Branch Rock, Baranof Island	56°16'48"	134°50'50"
Bluff Point, Kachemak Bay	59°40'	151°41'
Colville River Delta	70°27'	150°07'
Cordova	60°33'	145°45'
Danger Island, Prince William Sound	59°55'30"	148°05'
Drier Bay, Knight Island	60°18'30"	147°52'30"
Ernest Sound	56°11'	132°18'
Halibut Point, Baranof Island	57°06'	135°24'
Hole-in-the-Wall, Prince of Wales Island	56°16'10"	133°37'
Humpy Cove, Resurrection Bay	59°58'	149°18'
Icy Strait	58°18'	134°45'
Izembek Lagoon	55°20'	162°48'
Japonski Island	57°03'	135°22'
Juneau	58°18'15"	134°24'30"
Kalinin Bay	57°20'	135°47'
Kayak Island	59°56'	144°23'
Kodiak	57°47'20"	152°47'10"
Naked Island	60°40'	147°25'
Nikishka Beach	60°45'	151°18'
Olsen Bay	60°43'20"	146°12'30"
Orca Inlet	60°31'	145°52'
Outer Point	58°18'05"	134°41'15"
Peratrovich Island	55°35'	133°06'
Pingok Island, Harrison Bay	70°31'10"	149°31'30"
Point Bridget	58°40'45"	134°59'20"
Point Courverden	58°11'25"	135°03'10"
Point Craven	57°28'	134°52'
Port Lena	58°23'45"	134°46'45"
Port Valdez	61°05'	146°39'
Sam Sing Cove	56°59'	135°21"
Seldovia	59°26'15"	151°42'30"
Simpson Lagoon	70°30'	149°12'
Spruce Island	57°55'	152°25'
Stephens Passage	57°13'	133°39'
Still Harbor, Baranof Island	56°33'30"	135°02'30"
Three Entrance Bay	56°58'40"	135°22'40"
Ugaiushak Island	56°47'	156°51'
Uyak Bay	57°48'	154°04'
Women's Bay	57°43'	152°31'
Wrangell	56°28'	132°22'40"
Zaikof Bay, Montague Island	60°19'	146°58'

Alaskan records: Tutka Bay; Spruce Island; Ugaiushak Island; Point Bridget (UAM); Pt. Craven (RSL); Kachemak Bay (ROSENTHAL & LEES, 1976).

Remarks: 8 UAM specimens were examined. Common in the upper intertidal.

DISCUSSION

It should be noted that 11 of the listed species are known only from the type specimens or original collections, some collected over 100 years ago. This lack of information may be because recent collections or recorded observations are few, or because the species in question have very limited ranges.

Major range extensions include species found farther west, *i.e.*, *Anisodoris nobilis*, and species found farther north, *i.e.*, *Armina californica*. The apparent lack of two major groups, the Sacoglossa and Aplysiomorpha, as well as the low number of Anaspidea may, likewise, reflect either a lack of collections or the absence of these orders from the Alaskan fauna.

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LITERATURE CITED

- BABA, K. 1957. A revised list of the species of Opisthobranchia from the northern part of Japan, with some additional descriptions. *J. Fac. Sci., Hokkaido University*, ser. 6, Zoology 13:8-14.
- BARR, L. & N. BARR. 1983. Under Alaskan seas. Alaska Northwest Publishing: Anchorage, Alaska. i-xiv + 200 pp.
- BAXTER, R. 1983. Mollusks of Alaska. Bethel, Alaska. i-xii + 69 + i-xvii pp. (15 May 1983).
- BEHRENS, D. W. 1980. Pacific coast nudibranchs. A guide to the opisthobranchs of the northeastern Pacific. Sea Challengers, Inc.: Los Osos, California. 122 pp., 162 pls., 5 figs.
- BERGH, L. S. R. 1879-1880. On the nudibranchiate gastropod Mollusca of the North Pacific Ocean, with special reference to those of Alaska. *Proc. Acad. Natur. Sci. Phila.* Part I (1879) pp. 71-132, pls. 1-8. Part II (1880) pp. 40-127, pls. 1-8.
- BERGH, L. S. R. 1894. Die Opisthobranchien. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California. XIII. *Bull. Mus. Comp. Zool., Harvard* 25(10):123-233, pls. 1-12.
- BERTSCH, H. & L. A. ROSAS. 1984. Range extensions of nudibranchs along the Pacific coast of Baja California, Mexico. *Nautilus* 98(1):9-11.
- COWAN, I. M. 1964. New information on the distribution of marine Mollusca on the coast of British Columbia. *Veliger* 7(2):108-109.
- DALL, W. H. 1871. Descriptions of sixty new forms of mollusks from the west coast of North America and the North Pacific Ocean, with notes on others already described. *Amer. J. Conchol.* 7(2):93-160, pls. 13-16.
- DALL, W. H. 1919. The Mollusca of the Arctic coast of America collected by the Canadian Arctic expedition west from Bathurst Inlet with an appended report on a collection of Pleistocene fossil Mollusca. Rept. Canadian Arctic Exped. 1913-1918, vol. 8, pt. A, pp. 1A-25A, pls. 1-3.
- DALL, W. H. 1921. Summary of the marine shell bearing mollusks . . . *Bull. U.S. Natl. Mus.* 112:217 pp., 22 pls.
- DALL, W. H. 1925. A new *Acteocina* from British Columbia. *Nautilus* 39(1):25-26.
- EYERDAM, W. J. 1924. Marine shells of Drier Bay, Knight Island, Prince William Sound, Alaska. *Nautilus* 38(1):22-29.
- EYERDAM, W. J. 1960. Mollusks and brachiopods from Afognak and Sitkalidak Islands, Kodiak Group, Alaska. *Nautilus* 74(2):41-46; 74(3):91-95.
- EYERDAM, W. J. 1977. A collection of mollusks from Washington Bay, Alaska. *Of Sea and Shore* 8:109-110.
- FARMER, W. M. 1967. Notes on the Opisthobranchia of Baja California, Mexico, with range extensions—II. *Veliger* 9:340-342.
- FARMER, W. M. & C. L. COLLIER. 1963. Notes on the Opisthobranchia of Baja California, Mexico, with range extensions. *Veliger* 6:62-63.
- HO, J.-S. 1983. A new species of copepod associated with *Pleurobranchaea californica* (Gastropoda: Opisthobranchia), with a discussion on *Anthesius* associated with notoaspidean sea slugs. *Veliger* 25(4):393-398.
- KEEN, A. M. & E. COAN. 1974. Marine molluscan genera of western North America. An illustrated key. Stanford Univ. Press: Stanford, California. 208 pp.
- KRAUSE, A. 1885. Ein Beitrag für Kenntiss der molluscan Fauna des Beringsmeeres; Brachiopoda und Lamellibranchiata. *Archiv für Naturgesch.* 51:14-40, 256-302.
- LAMBERT, P. 1976. Records and range extensions of some northeastern Pacific opisthobranchs (Mollusca: Gastropoda). *Can. J. Zool.* 54:293-300.
- LANCE, J. R. 1961. A distributional list of southern California opisthobranchs. *Veliger* 4:64-69.
- LANCE, J. R. 1966. New distributional records of some northeastern Pacific Opisthobranchiata with descriptions of two new species. *Veliger* 9:69-81.
- LA ROCQUE, A. 1953. Catalogue of the recent Mollusca of Canada. *Natl. Mus. Can. Bull.* 129, pp. i-ix, 1-406.
- LEE, R. S. & P. BROPHY. 1969. Additional bathymetric and locality data for some opisthobranchs and an octopus from Santa Barbara County, California. *Veliger* 12:220-221.
- LEMICHE, H. 1941. The zoology of East Greenland, Gastropoda: Opisthobranchiata. *Meddelelser om Gronland* 121(7):1-49.
- MCDONALD, G. R. 1970. Range extensions for *Acanthodoris hudsoni* MacFarland, 1905, and *Onchidoris bilamellata* (Linnaeus, 1767). *Veliger* 12:375.
- MCDONALD, G. R. 1983. A review of the nudibranchs of the California coast. *Malacologia* 24(1-2):114-276.
- MCDONALD, G. R. & J. W. NYBAKKEN. 1980. Guide to the nudibranchs of California. American Malacologists: Melbourne, Florida. 72 pp., 112 pls., 36 figs.
- MACFARLAND, F. M. 1966. Studies of opisthobranchiate mollusks of the Pacific coast of North America. *Mem. Calif. Acad. Sci.* 6:1-546, pls. 1-72.
- MACGINITIE, N. 1959. Marine Mollusca of Point Barrow, Alaska. *Proc. U.S. Natl. Mus.* 109:59-208, pls. 1-27.
- MARCUS, E. 1961. Opisthobranch mollusks from California. *Veliger* 3(suppl. 1):1-85, pls. 1-10.

- MILLEN, S. V. 1982. A new species of dorid nudibranch (Opisthobranchia: Mollusca) belonging to the genus *Anisodoris*. *Can. J. Zool.* 60(11):2694-2705.
- MILLEN, S. V. 1983. Range extensions of opisthobranchs in the northeastern Pacific. *Veliger* 25(4):383-385.
- O'DONOGHUE, C. H. 1926. A list of the nudibranchiate Mollusca from the Pacific Coast of North America, with notes on their distribution. *Trans. Royal Canadian Inst., Toronto* 15:119-247.
- ROBILLIARD, G. A. 1970. The systematics and some aspects of the ecology of the genus *Dendronotus* (Gastropoda:Nudibranchia). *Veliger* 12(4):433-479.
- ROBILLIARD, G. A. 1971. Range extensions of some northeast Pacific nudibranchs (Mollusca: Gastropoda: Opisthobranchia) to Washington and British Columbia with notes on their biology. *Veliger* 14:162-165.
- ROBILLIARD, G. A. 1974. Range extensions of some north-eastern Pacific nudibranch molluscs. *Can. J. Zool.* 52(8):989-992.
- ROBILLIARD, G. A. & L. BARR. 1978. Range extensions of some nudibranchs in Alaskan waters. *Can. J. Zool.* 56(1):152-153.
- ROGINSKAYA, I. S. 1972. *Calycidoris guentheri* (Gastropoda, Nudibranchia). *Taksonomiya i rasprostranenie. Zoologicheskii Zhurnal* 51:913-918.
- ROSENTHAL, R. J. 1977. Sea otters and their subtidal habitats in Prince William Sound. Prepared for U.S. Department of the Interior, Fish and Wildlife Service. 127 pp.
- ROSENTHAL, R. J. & D. C. LEES. 1976. Marine plant community studies, Kachemak Bay, Alaska. Prepared for State of Alaska, Department of Fish and Game. 288 pp.
- ROSENTHAL, R. J. & D. C. LEES. 1982. Description of Prince William Sound shoreline habitats associated with biological communities. Dept. Comm., OMPA. 58 pp.
- THOMPSON, T. E. 1971. Tritoniidae from the North American Pacific coast. *Veliger* 13(4):333-338.
- THOMPSON, T. E. & G. H. BROWN. 1976. British opisthobranch molluscs. *Synopses of the British fauna* No. 8, Academic Press. 203 pp., 105 figs., 1 color plate.